

## Claim

1. An activation signal output circuit comprising:

multiple stages of amplifier circuits in a plurality of stages, wherein a radio frequency signal intermittently transmitted is detected to thereby generate a detection signal, and an activation signal indicating that the radio frequency signal has been detected is output in accordance with the detection signal, characterized by

a capacitor C inserted in series in a signal transfer line in any one interstage portion of the amplifier circuits, whereby a high pass filter characteristic is provided.

2. An activation signal output circuit according to claim 1, characterized in that a cutoff frequency  $f_c$  of the high pass filter characteristic is set lower than a frequency ( $= 1/T$ ) corresponding to an intermittent incoming period T of the radio frequency signal intermittently transmitted.

3. An activation signal output circuit according to claim 2, characterized in that the capacitor C is set for a desired cutoff frequency  $f_c$  to satisfy

$$2\pi f_c \cdot C \cdot |Z| \approx 1$$

with respect to an input impedance Z of the amplifier circuit of which an input side is connected with the capacitor C.

4. An activation signal output circuit according to any one of claims 1 to 3, characterized in that a low pass filter characteristic is provided to the amplifier circuits by limiting a bias current flowing to transistors constituting the amplifier circuits to a minimized value, and a band pass filter characteristic is provided by using the low pass filter characteristic and a high pass filter characteristic provided with the capacitor.

5. An activation signal output circuit according to any one of claims 1 to 4, characterized in that, of the amplifier circuits, an amplifier circuit in a foremost stage that detects and rectifies a radio frequency signal comprises:

a detector diode that detect the radio frequency signal;

a differential amplifier that includes differential pair transistors TrL and TrR; and

a current mirror circuit that regulate a current of the differential amplifier,

wherein a base current of TrL which is one of the differential pair transistors substantially matches with a direct current component of a current flowing in the detector diode, and a sum of currents flowing in the differential pair transistors TrL and TrR are regulated by the current mirror circuit to be substantially constant.

6. An activation signal output circuit according to any one of claims 1 to 5, characterized in that, of the amplifier circuits, the amplifier circuit in the foremost stage that detects and rectifies the radio frequency signal further comprises a voltage-doubler detector circuit, and the detector diode for detecting the radio frequency signal constitutes a part of the voltage-doubler detector circuit.